ABSTRACT OF THE DISCLOSURE

A continuous parametric model is provided for a physical circuit element that includes a base model which exhibits a discontinuity over an allowable range of model parameters or a discontinuity in the first derivative of the allowable range of model parameters. At least one compensation function can be provided to remove the discontinuities of the base model over the allowable range of parametric values and at least one compensation constant can be included to prevent a first derivative of the base model from exhibiting discontinuities over the allowable range of parameters, whereby the base model is rendered continuous. The resulting continuous parametric model provides enhanced simulation/analysis performance when compared to traditional smoothing functions.